MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE GWALIOR

Department of Mechanical Engineering

REPORT OF SKILL BASED MINI PROJECT

Design of Machine Elements (120412)

Title of Project: KNUCKLE JOINT

Introduction: A knuckle joint is a mechanical joint used to connect two rods which are under a tensile load, when there is a requirement of small amount of flexibility, or angular moment is necessary. There is always axial or linear line of action of load.

The knuckle joint assembly consists of the following major components:

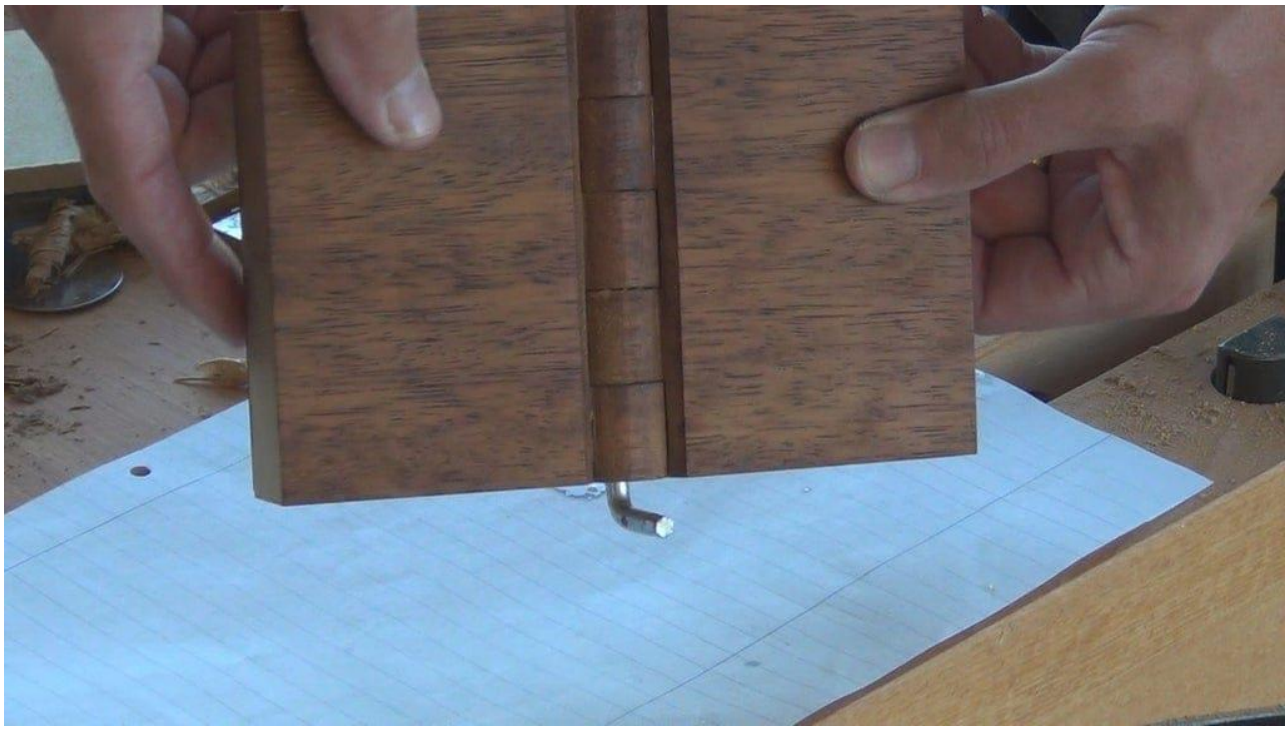
1. Single eye.
2. Double eye or fork
3. Knuckle pin

Here we have tried to make a 3d wooden model of knuckle joint & discuss it's different features & applications.

Description of Model

Name**:** 180 degree knuckle joint

Material used: wood



Applications of Model

Knuckle Joint has mainly three components – eye, fork, and pin. The eye is formed on one of the rods and the fork is formed on the other. The eye fits inside the fork and the pin is passed through both the fork and the eye. This pin is secured in its place by means of a split pin. The ends of the rods are made octagonal to some distance for better grip and are made a square for some portion before it is forged to make the eye and fork shapes.

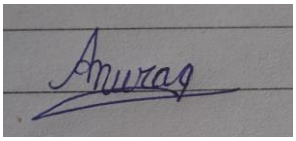
Tie rod joint of roof truss.

1. Tension link in bridge structure.
2. Link of roller chain.
3. Tie rod joint of jib crane.
4. The knuckle joint is also used in tractor.
5. Connecting rods between locomotive wheels.

What I Learned Through Project:

The given project was a great opportunity for me to understand the knuckle joint in a thorough manner. We were able to have the opportunity to ponder upon it's application & different features. We also get the on-hand experience to brush up our workshop skill & to learn to make the wooden model of knuckle joint.

Submitted by



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